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Information technology—Specification and standardization of data elements

PART 6:

Registration of data elements

ICS 35.040

Descriptions, data processing, information interchange, data representation, data elements, specifications, registration, maintenance.

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Foreword

ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission) form the specialized system for worldwide standardization. National bodies that are members of ISO and IEC participate in the development of International Standards through technical committees established by the respective organization to deal with particular fields of technical activity. ISO and IEC technical committees collaborate in fields of mutual interest. Other international organizations, government and non-government, in liaison with ISO and IEC, also take part in the work.

In the field of information technology, ISO and IEC have established a joint technical committee, ISO/IEC JTC1. Draft International Standards adopted by the joint technical committee are circulated to national bodies for voting. Publication as an International Standard requires approval by at least 75% of the national bodies casting a vote.

International Standard ISO/IEC 11179-6 was prepared by Joint Technical Committee ISO/IEC JTC 1, *Information technology*, Subcommittee SC 14, *Data element principles*.

ISO/IEC 11179 consists of the following parts, under the general title *Information technology - Specification and standardization of data elements*:

   - *Part 1: Framework for the specification and standardization of data elements*

   - *Part 2: Classification of concepts for identification of domains*

   - *Part 3: Basic attributes of data elements*

   - *Part 4: Rules and guidelines for the formulation of data definitions*

   - *Part 5: Naming and identification principles for data elements*

   - *Part 6: Registration of data elements*

Annex A forms an integral part of this part of ISO/IEC 11179. Annexes B and C are for information only.

Introduction

This part of ISO/IEC 11179 describes the procedure by which data elements required in various application areas are registered and assigned an internationally unique identifier. The uniqueness of a registered data element is determined by a combination of the Registration Authority Identifier (RAI), the unique identifier assigned to a data element within a Registration Authority (RA), and the version under which a data element registration is submitted or updated. The registered data elements are included in Registers of Data Elements, maintained by an RA, to which the data elements logically and functionally belong. Organizations wishing to become RA may do so in accordance with the procedure prescribed in Clause 5.

1   Scope

For each data element to be registered, this part of ISO/IEC 11179 defines the type of information that shall be specified, the conditions that shall be met, and the procedure(s) that shall be followed. This part of ISO/IEC 11179 does NOT specify the register's system design, file organization techniques, storage media, programming languages, etc. to be used in its implementation. The procedure prescribed herein, however, may be extended to register other shared objects, such as object classes, data element concepts, and permissible data element values.

2   Normative References

The following standards contain provisions that, through reference in this text, constitute provisions of this part of ISO/IEC 11179. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this part of ISO/IEC 11179 are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO/IEC 2382-1 : 1993, *Information technology - Vocabulary - Part 1: Fundamental terms*.

ISO 2382-4 : 1987, *Information processing systems - Vocabulary - Part 4: Organization of data*.

ISO/IEC 11179-3 : 1994, *Information technology specification and standardization of data elements - Part 3: Basic attributes of data elements*.

ISO/IEC 11179-4 : 1995, *Information technology specification and standardization of data elements - Part 4: Rules and guidelines for the formulation of data definitions*.

ISO/IEC 11179-5 : 1995, *Information technology specification and standardization of data elements - Part 5: Naming and identification principles for data elements*.

ISO/IEC JTC 1 Directives, *Procedures for the technical work of ISO/IEC JTC 1 on Information Technology, third edition, 1995*.

ISO/IEC 6523-1: ____[1], *Information technology - Structure for the identification of organization and organization parts - Part 1: Identification of organization identification schemes*.

ISO/IEC 6523-2: ____[2], *Information technology - Structure for the identification of organization and organization parts - Part 2: Registration of organization identification schemes*.

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[1] To be published. (Revision of ISO 6523:1984).

[2] Currently at the stage of draft.

ISO/IEC 7826-1:1994, *Information technology - General structure for the interchange of code values - Part 1: Identification of coding schemes*.

3   Definitions

For the purposes of this part of ISO/IEC 11179, the definitions given in ISO/IEC 7826-1 and the following definitions apply.

3.1 administrative status: A designation of the position in the processing life-cycle of a registration authority for handling registration requests.

3.2 data: A representation of facts, concepts, or instructions in a formalized manner, suitable for communication, interpretation, or processing by humans or automatic means.
(Ref. ISO/IEC 2382-1).

3.3 data element: A unit of data for which the definition, identification, representation, and permissible values are specified by means of a set of *attributes*.

3.4 data element concept: A concept that can be represented in the form of a data element, described independently of any particular representation.

3.5 data element value: A value out of a set of permissible values pertaining to a data element.

3.6 data identifier (DI): An identifier assigned to a data element within an RA [RE: ISO/IEC 11179-3, 6.1.2].

3.7 data item: One occurrence of a data element.

3.8 international registration data identifier (IRDI): An internationally unique identifier for a Data Element as defined in the framework of this part of ISO/IEC 11179.

3.9 information interchange: The process of sending and receiving data in such a manner that the information content, or meaning assigned to the data, is not altered during the transmission.

3.10   register: A set of files (paper, electronic, or a combination) containing the assigned data elements and the associated information. (Definition adapted after that in Annex E of the ISO/IEC Directives.)

3.11   registration: The assignment of an unambiguous identifier to a data element in a way that makes the assignment available to interested parties. (Definition adapted after that in Annex E of the ISO/IEC JTC 1 Directives.)

3.12   registration authority identifier (RAI): An identifier assigned to a Registration Authority [RE: ISO/IEC 11179-3, 6.1.4].

3.13   registration authority (RA): Any organization authorized to register data elements.

3.14   **registration status:** A designation of the position in the registration life-cycle of a data element.

3.15   **responsible organization (RO):** The organization or unit within an organization that is responsible for the contents of the mandatory attributes by which the data element is specified.

3.16   **submitting organization (SO):** The organization or unit within an organization that has submitted the data element for addition, change, or cancellation/withdrawal in the data element dictionary.

3.17   **version:** Identification of an issue of a data element specification in a series of evolving data element specifications within a Registration Authority**.**

3.18   **version identifier (VI):** An identifier assigned to a Version under which a data element registration is submitted or updated [RE: ISO/IEC 11179-3, 6.3].

4   Identification of Data Elements

Data elements registered under the provisions of this part of ISO/IEC 11179 are each assigned an International Registration Data Identifier (IRDI). This identifier value uniquely identifies the data element within the framework of this part of ISO/IEC 11179.

4.1 Components of International Registration Data Identifier (IRDI)

As discussed in the Introduction of this part of ISO/IEC 11179, the uniqueness of a registered data element is determined by the combination of the values of three identifying attributes, as depicted in Figure 1 and defined in Part 3 of ISO/IEC 11179:
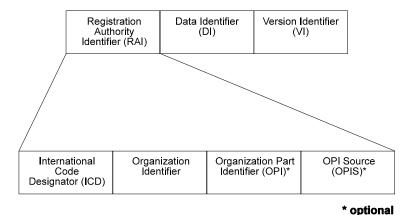
a) An identifier assigned to a Registration Authority [RE: ISO/IEC 11179-3, 6.1.4] hereafter called Registration Authority Identifier (RAI).
b) An identifier assigned to a data element within an RA [RE: ISO/IEC 11179-3, 6.1.2] hereafter called Data Identifier (DI).
c) An Identifier assigned to a Version under which a data element registration is submitted or updated [RE: ISO/IEC 11179-3, 6.3] hereafter called Version Identifier (VI).

Notes: 1.   Although the version may not necessarily be required to make a data element unique within a Register, the inclusion of the version in the International Data Element Identifier would provide a unique reference point, should a conflict arise.
2.   OPI and OPIS are optional per ISO/IEC 6523. ISO/IEC 11179-6 uses the entire structure of ISO/IEC 6523 as an RAI.

4.2 Assignment of Values to International Registration Data Identifier (IRDI) Components

An IRDI will be assigned to a data element submitted for registration. The assignment shall be performed in accordance with the procedures specified in 6.1. The values of each component

of IRDI are assigned as follows.

4.2.1 Assignment of Registration Authority Identifier (RAI)

Registration Authority Identifier (RAI)	Data Identifier (DI)	Version Identifier (VI)

International Code Designator (ICD)	Organization Identifier	Organization Part Identifier (OPI)*	OPI Source (OPIS)*

* optional

Ref: ISO 6523

Every organization wishing to become an RA shall possess an internationally recognized

Figure 1: Structure of International registration Data Identifier (IRDI)

organization code, assigned in accordance with the procedure prescribed in ISO/IEC 6523. The entire structure for identification of organizations, as described in Clause 3 of ISO/IEC 6523, shall be the internationally unique RAI for the purpose specified in this part of ISO/IEC 11179.

4.2.2 Assignment of Data Identifier (DI)

Each new data element accepted into the register shall be assigned a new DI. A new DI shall also be assigned to an existing data element when it is modified in such a way as to change the meaning of the data element or the representation form of the potential values of the data element. For example, changes to the mandatory attributes Definition and/or Form of Representation (referenced in Annex A) would require the assignment of a new DI. Editorial changes to the definition, however, would not cause generation of a new data element, as long as the essential meaning expressed by the definition remains the same. For example, the value of the administrative attributes listed in Annex A may change without causing generation of a new DI.

Based on the requirements of the subject matter included in its register, each RA shall establish and publish, as appropriate, specific guidelines for any additional conditions requiring assignment of a new DI (i.e., generation of a new data element), due to changes in the values of mandatory attributes established for its register.

4.2.3 Assignment of Version Identifier (VI)

In general, a new VI may be generated when any attribute value (other than one requiring a new DI) changes. Each data element, however, may require a different versioning treatment.

For example, a change in Permissible DE Values for an Employee Name may not require a new version, while a change of Permissible DE Values for Account Type will likely require a version change. Each RA shall establish specific guidelines for the subject matters in which it specializes and for which it is responsible.

5 Registration Participating Organizations

There are three types of Registration Acting Bodies (RAB) in the framework of this part of ISO/IEC 11179: SOs, RAs, and ROs. Each type of RAB shall, respectively, meet the criteria, fulfill the roles, and assume the responsibilities prescribed in the following clauses of this part of ISO/IEC 11179.

5.1 Designation of Registration Acting Bodies (RAB)

5.1.1 Eligibility of Submitting Organizations (SO)

All SOs wishing to register data elements according to this part of ISO/IEC 11179 shall be able to do so in accordance with the procedures prescribed in this part of ISO/IEC 11179. Each RA may establish its own criteria for membership eligibility.

5.1.2 Designation of Responsible Organizations (RO)

ROs are usually designated by a business entity to coordinate the contents of mandatory attributes of related data elements managed by its SOs. In the absence of a designated RO, an SO shall act as an RO.

5.1.3 Establishment of Registration Authorities (RA)

While this part of ISO/IEC 11179 provides the procedures for registering data elements, it does not intend to establish organizations to serve as RAs for this part of ISO/IEC 11179. It is envisioned that any organization wishing to become an RA for the purpose of registering data elements may do so.

In order to establish itself as an RA, an organization shall complete the following:

- Secure an RAI in accordance with 4.2.1.

- Prescribe, amend, and interpret the procedures to be followed for the registration of data elements in accordance with this part of ISO/IEC 11179.

- Determine any additional conditions specifically required by its domain of registration.

- Specify the format for each attribute listed in Annex A of this part of ISO/IEC 11179 and for any additional attributes that the RA may deem necessary, and specify the media by which a data element may be submitted for registration. The registration form and accompanying procedure shall be made available to requesting SOs.

- Determine the format and media in which applications shall be submitted. The RA shall also provide SOs with guidance on the submission of applications.

- Establish and publish the rules by which its register shall be made available. The RA shall specify the allowable users, the accessible contents, the frequency of availability, and the language(s)[3], media, and format in which the information is provided.

5.2 Role of Registration Acting Bodies (RAB)

5.2.1 Role of Submitting Organizations (SO)

An SO wishing to register a data element shall follow the procedures and requirements prescribed in this part of ISO/IEC 11179 for submission to the appropriate RA.

5.2.2 Role of Responsible Organizations (RO)

An RO is the organization, or part thereof, that is responsible for the integrity and accuracy of the attributes values of the data element; e.g., the semantics and permissible values of data elements maintained and controlled by an RA.

The RO, at the RA's request, shall review proposals from Submitting Authorities on relevant attributes, e.g., name, definition, and permissible data element values. The RO shall inform the RA of any essential modifications in the specification of the assigned data elements.

5.2.3 Role of Registration Authorities (RA)

An RA shall receive and process proposals from SOs for registration of data elements falling within its registration domain. An RA is responsible for maintaining the register of data elements and issuing of IRDIs.

5.3 Responsibilities of Registration Acting Bodies (RAB)

5.3.1 Responsibilities of Submitting Organizations (SO)

An SO is responsible for the following activities:

- Providing the information specified in Annex A in the form required by the RA.

- Providing any additional information that may reasonably be required by the RA to enable it to perform its responsibilities.

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[3] "Language(s)" here denotes national natural languages, e.g, French, English, Spanish.

-    Ensuring that when a data element has been registered, specification of the attribute values of the data element is not changed without first advising the RA.

5.3.2 Responsibilities of Responsible Organizations (RO)

An RO shall:

-    At the RA's request, advise on the semantics, name, and permissible value of data elements submitted for registration.

-    Notify the RA of any amendments to the data elements assigned to the RO.

-    Decide, in case of confusion and/or conflict, on the attribute values of the assigned data elements.

5.3.3 Responsibilities of Registration Authorities (RA)

Regarding applications for registering data elements, an RA shall fulfill the following responsibilities:

-    Receive and process applications for the registration of data elements, assign IRDI values, and maintain a Data Element Register in accordance with the following provisions.
-    Consult the appropriate ROs when requests affect the mandatory attributes of the data elements being registered.

-    Handle all aspects of the registration process in accordance with good business practice and, in particular, take all reasonable precautions to safeguard the Register.   Specifically, the responsibilities of an RA are as follows:

-    Receive applications for the registration of data elements from its SOs.

-    Review and facilitate the progression of the applications through the registration cycle.

-    Assign appropriate Registration Status.

-    Notify SOs of its decisions according to the procedure specified in this part of ISO/IEC 11179.

6 Procedures for the Registration of Data Elements

6.1 Registration Procedures for the Registration of New Data Elements

Applications to an RA for the registration of data elements shall be made by its SOs, after having consulted, as appropriate, with their corresponding ROs.

The RA shall decide whether an application is acceptable. If the proposal is acceptable, the RA shall mark the Registration Status as "Recorded."

If the application is acceptable, the RA shall assign an IRDI value in accordance with 4.2. The RA shall then add the IRDI and the information provided in the application to the Register of Data Elements. The SO and, as appropriate, its RO shall be sent a copy of the entry and requested to check the entry and advise the RA immediately if any errors are detected. After verification by the RA, the RO, and the SO, the Registration Status of the acceptable proposal shall be marked as "Certified" or "Standardized," as appropriate, in accordance with 6.3.

If the application is not acceptable, it shall be returned to the SO with a clear statement of the reasons for rejection. If possible, constructive advice shall be given as to the manner in which the application could be rendered acceptable. Reasons for rejection may, for example, include the omission of essential information.

6.2 Registration Procedures for Amendments

Requests for changes to the Register of Data Elements will normally be notified to the RA by the original SO. If requests for change are received from any other source, the RA shall refer the request to the original SO and, as appropriate, to the RO, for confirmation before taking any further action.

The RA shall update the Register of Data Elements. The SO and, as appropriate, the RO, shall be sent a copy of the entry and requested to check the entry and advise the RA immediately if any errors are detected.

If the request for change is not acceptable, it shall be returned to the SO and, as appropriate, the RO, with a clear statement of the reasons for rejection. If possible, constructive advice shall be given as to how to make the request acceptable. Reasons for rejection may, for example, include the omission of essential information.
Except as specified above, the Registration Procedures for Amendments remain explicitly the same as those for New Data Elements (RE: 6.1).

6.3 Specification of Registration Status

This attribute provides "a designation of the position in the registration life-cycle of a data element." (RE: ISO/IEC 11179-3, 6.5.2.)

The following statuses shall be assigned and recorded by RAs for each data element in the process of implementing the procedures prescribed in 6.1 and 6.2:

Incomplete: The registered data element does not contain all Mandatory Attribute values.

 recorded: The registered data element contains all Mandatory Attribute values, but the contents may not meet the quality requirements specified in other parts of ISO/IEC 11179.

certified: The recorded data element has met the quality requirements specified in this and other parts of ISO/IEC 11179.

standardized: The certified data element that is established by the Registration Authority as a

data element preferred for use in data interchange and in new or updated applications. The "standardized" data element may be unique within the registry, or it may be the preferred data element among similar data elements.

retired: A recorded, certified, or standardized data element is no longer used after having been marked as "phased out" for a period of time as prescribed by the appropriate RA.

The RA shall establish further detailed criteria required within its domain to achieve each status level.

6.4 Specification of Administrative Status

This is a designation of the position in the processing life-cycle of an RA for handling registration requests. The values of this attribute are assigned by an RA with the permissible values, such as Received, Draft, Rejected, Submitted for Certification, etc., to facilitate the management of its Register. It is the responsibility of the RA to refine, publish, and implement this administrative feature.

7 Registers of Data Elements

Each RA shall maintain a Register for data elements that fall under its purview.

7.1 Contents

The Register shall contain, at minimum, the information contained in normative Annex A, Data Element Register, for each data element registered.

7.2 Language(s)

The language(s) to be used for the register shall be determined by the procedure prescribed by the appropriate RA.

7.3 Availability of the Register of Data Elements

The availability of the contents of the register shall be governed in accordance with the procedure prescribed by the appropriate RA.

7.4 Copyright of the Register of Data Elements

Since the RAs are self-governing bodies operating voluntarily under the procedures specified by this part of ISO/IEC 11179, the copyright of the Registers shall belong to the founding RAs.

Annex A
(normative)

Data Element Registers

Each entry in the Data Element Registers shall contain values for the following attributes:

A.1 Basic Attributes of Data Elements.

These are the basic attributes specified in Part 3 of ISO/IEC 11179 and listed in Table A-1.

A.2 Administrative Attributes.

The attributes, listed in Table A-2, are the minimum set of additional attributes required for the maintenance of a Data Element Register, in accordance with Annex E, Registration Definitions and Guidelines for Procedure Standards, of ISO/IEC Directives, Procedures for the Technical Work of ISO/IEC JTC 1 on Information Technology.

A.3 Additional Attributes.

These attributes may be added to satisfy technical requirements peculiar to the class(es) of objects maintained by the RA and/or administrative needs of an RA. Such RA shall specify these attributes using the same descriptors as those prescribed in Clause 4, *Descriptors of a Data Element Attribute*, of Part 3 of ISO/IEC 11179. Please see Clause B.1 for further discussion and suggestions.

Table A-1: Basic Attributes of Data Elements for Data Element Registers
(RE: Part 3 of ISO/IEC 11179)

Attribute Category	Name of Data Element	RE: ISO/IEC 11179-3	Obligation	Responsibility		
				SO	RO	RA
Identifying	Name	(6.1.1)	M	P	R	R
	Identifier	(6.1.2)	M*			A
	Version	(6.1.3)	M*			A
	Registration authority	(6.1.4)	M*	P		R
	Synonymous name	(6.1.5)	O	P		R
	Context	(6.1.6)	M*	P		R
Definitional	Definition	(6.2.1)	M	P	R	R
Relational	Classification scheme	(6.3.1)	O	P		R
	Keyword(s)	(6.3.2)	O	P		R
	Related data reference	(6.3.3)	O	P		R
	Type of relationship	(6.3.4)	C	P		R
Representational	Representation category	(6.4.1)	M	P		R
	Form of representation	(6.4.2)	M	P		R
	Data type of data element values	(6.4.3)	M	P		R
	Maximum size of data element values	(6.4.4)	M	P		R
	Minimum size of data element values	(6.4.5)	M	P		R
	Layout of representation	(6.4.6)	C	P		R
	Permissible data element values	(6.4.7)	M	P	R	R
Administrative	Responsible organization	(6.5.1)	M*	P		R
	Registration status	(6.5.2)	M*			A
	Submitting organization	(6.5.3)	M*	P		R
	Comments	(6.5.4)	O	P		R

RA— Registration Authority   O— Optional
CO — Responsible Organization M— Mandatory
SO— Submitting Organization   P— Provide
A— Assign   R— Review
C— Conditional

* For the purpose of registering data elements, the obligations of the attributes marked with an asterisk (*) are changed to mandatory status. Because a register may be shared by multiple organizations, the values of these attributes must be present to permit appropriate update and retrieval.

Table A-2: Administrative Attributes for Data Element Registers

Name of Data Element	Obligation	Responsibility	
		SO	**RA**
Administrative status	M		A
Address of submitting organization (SO)	M	P	R
Name of SO's contact person	M	P	R
Title of SO's contact person	O	P	R
Postal address of SO's contact person	M	P	R
Electronic mail address of SO's contact person	O	P	R
Phone number of SO's contact person	M	P	R
Fax number of SO's contact person	O	P	R
Telex number of SO's contact person	O	P	R
Date of original assignment	M		A
Date of last update	C		A
Address of current owner (CO)	M	P	R
Name of CO's contact person	M	P	R
Title of CO's contact person	O	P	R
Postal address of CO's contact person	M	P	R
Electronic mail address of CO's contact person	O	P	R
Phone number of CO's contact person	M	P	R
Fax number of CO's contact person	O	P	R
Telex number of CO's contact person	O	P	R

RA — Registration Authority
CO — Responsible Organization
SO — Submitting Organization
CO — Current Owner
A   — Assign
C   — Conditional
O   — Optional
M   — Mandatory
P   — Provide
R   — Review

Note: These attributes are required and/or recommended in Annex E of the ISO.IEC JTC 1 Directives

Annex B
(informative)

Additional Registration-Related Information

B.1 Additional Attributes

RAs may require additional attributes to be submitted and/or maintained. These can be grouped into two major categories: Technical and Administrative Attributes.

B.1.1 Technical Attributes

Depending on the classes of object(s) for which an RA is responsible, the list of these attributes required for a particular RA may be expanded to accommodate its needs and those of its members. For example:

- An engineering-oriented RA may capture and maintain additional attributes, such as unit of measure, formula, method/procedure used, etc.
- An information systems data modeler may add attributes, such as usage, steward, owner, quality indicator, etc.

B.1.2 Administrative Attributes

Additional administrative attributes, suggested for RA in Annex E of the ISO/IEC Directives, include, but are not limited to:

- Request for update
- Release authorization
- Justification for registration
- Reasons for action taken
- Applicable technical and/or procedure standards.

RAs may specify other attributes as needed to maintain their registers.

B.2 Permissible DE Values and Version

Permissible DE Values may be enumerated, axiomatic, or unspecified.

Enumerated Permissible DE Values, also called Bounded Domain (e.g., Country Code as defined under ISO 3166), usually do not change without appropriate action(s) taken in accordance with prescribed procedure(s). *Changes to Bounded Domain usually require a new version for the affected data element.*

Axiomatic or unspecified Permissible DE Values, also called Unbounded Domain (e.g., possible names of employees), are not defined. *Changes to Unbounded Domain usually do not require a new version to the affected data element.*

Each RA, however, shall establish specific guidelines for the subject matters in which it specializes

and for which it is responsible.

B.3 Hierarchy of Registration Authorities (RA)

The number of potential data elements to be registered in the framework of ISO/IEC 11179 is unlimited and diverse. So is the number of potential RAs.

It is envisioned that organizations wishing to share information among themselves may want to establish an RA for that purpose. An RA and its members may subsequently want to share subsets of data elements with other RAs and their members. If two or more RAs believe that they should standardize certain data elements across their areas of interest, they may accomplish this requirement in a couple of ways: Either they will negotiate to complement one another's registers with their already standardized data elements, or they will establish another RA to register data elements that they want to share, but are not available or agreed upon. Under the latter circumstance, the current RAs will become SOs and the newly founded RA will become the RA for shareable data elements. Conceptually, this hierarchy may be repeated.

This part of ISO/IEC 11179 allows as much flexibility as needed for data sharing purposes. The viability of individual RAs depends on other economic and practical benefits to their subscribing communities.

Annex C
(informative)

Frequently Asked Questions

C.1 *Should a data element contain more than the five (5) Registration Statuses currently specified in 6.3?*

The five (5) Registration Statuses specified in this part of ISO/IEC 11179 are intended to provide criteria for assigning defined levels of compliance of each Data Element submitted for registration.

Some organizations have adopted the practice of combining the above statuses with statuses of administrative nature, e.g., Received, Processed, Being Promoted. Attribute **Administrative Status**, as specified in this part of ISO/IEC 11179, shall be used for this administrative purpose.

C.2 *Why don't we have a single international RA for all data elements?*

It would be conceptually more attractive to have a single RA for all data elements. Redundancy would be minimized, and data sharing would be easier thanks to a single point of reference. Actually, this part of ISO/IEC 11179 has evolved from a single global RA to a predetermined hierarchy similar to that prescribed in the previous Annex H of JTC 1 Directives. Although these approaches may be suitable for the registration of a finite number of objects, e.g., Registration of Graphical Items (RE: ISO/IEC 9973), they are, however, neither viable nor practical for the registration of data elements. There will be a very large number of data elements to be registered, and no single organization will have resources and expertise to review and register data elements of varied subject matters.

C.3 *Is ISO/IEC 6523 a viable vehicle for assigning identifiers to be used as RAIs?*

Several options have been contemplated: a) no required RAI in the case of a single global RA; b) use a randomly generated number as RAI, e.g., Object ID (OID) in IRDS models; and c) use ISO/IEC 6523 RA as a vehicle for distributing organization codes that will be used as RAIs.

ISO/IEC RA, especially lately, has been able to attract agencies like EAN, Dun & Bradstreet, SWIFT, who have hundreds of thousands of registered members. Also, ISO/IEC 6523 has been adopted by EDIRA (RA for EDI) as a framework for assigning organization codes for EDI purposes.

We feel that ISO/IEC 6523 currently is a viable vehicle for RAI assignment in the framework of this part of ISO/IEC 11179. An informal Internet survey of ANSI/X3L8 members, ISO/IEC JTC 1 members, and some Open-EDI participants was conducted on this topic. The feedback seems to confirm our conclusion.

C.4 *Why does this part of ISO/IEC 11179 not address the registration of other objects, such as Object Classes and Data Element Concepts?*

Although the above objects may need to be registered for certain purposes, the scope of

ISO/IEC 11179 is limited, at this point, to Data Elements.

C.5 *How can an RA obtain an RAI?*

In general, virtually every organization has already been assigned an organization code that is internationally unique; therefore, by default, they already have an RAI. Per ISO/IEC 6523, and as illustrated in Figure 1 of this part of ISO/IEC 11179, the following scenarios will happen:

-   Institutions like Dun & Bradstreet or SWIFT have been assigned International Code Designators (ICD) through the maintenance agency of ISO/IEC 6523

-   Subsequently, the above institutions assign Organization Identifiers (RE: Identification of Organization) to their subscribing members

-   Their members, subsequently, assign Organization Part Identifiers (RE: Identification of Organization Part) to their internal organizational units.

The concatenation of ICD, Organization Identifier, and Organization Part Identifier thus creates an internationally-unique RAI.

C.6 *"Perhaps an automated maintenance system could be used so organizations, particularly those that participate in EDI, could register on line and obtain verification in a few minutes of the registration acceptance."*[4]

"...the standard's [i.e., ISO/IEC 11179-6's) scope is to set the framework by which organizations may establish registration authorities dealing with data elements in their domains of interest. Registries/directories set up by those registration authorities may use, in fact are encouraged to take advantage of the available electronic means available to them..."[2]

C.7 *There is some concern with making Registration Status and Administrative Status two separate pieces of information. "What will happen when a user relies upon a data element because it is marked 'standardized' in the Registration Status, but the user does not notice that it is marked only 'draft' in the Administrative Status? I think this information belongs in only Registration Status with the following categories:*

incomplete
draft
recorded
certification candidate
provisionally certified
certified
standardization candidate
provisionally standardized
standardized"

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[4] Excerpts from Internet mail messages regarding ISO/IEC 11179-6

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Registration Status (6.3) is reserved for use as a quality indicator for the metadata of a data element being maintained in a data register. The public users at large, in our opinion, should be able to depend on the Registration Status to automatically take actions related to a certain data elements. Data elements under review, unfortunately, may contain erroneous information and, thus, may not be dependable. *The real issue here is whether those data elements that have not passed the administrative and technical reviews should be allowed in the "official" register at all.*

Let's assume that there is only one register, and that the Administrative Status attribute will be subsumed by the Registration Status attribute as suggested above . Under this scenario, the attributes of all data elements applying for registration will be stored in the register and granted a Registration Status, even before the review is complete. Let's further assume that a specific data element is currently registered as "certified," and there is a new application, with updated information, to upgrade the same data element to "standardized." *Should the registrar then override the "certified" data element with the updated information* and change the Registration Status to "standardization candidate"? The answer, in our opinion, should be negative. Data that have not passed the appropriate reviews should not be allowed to corrupt the "good" data. In other words, any data elements that do not meet the criteria for being granted one of the Registration Statuses, as specified in Clause 6.3 of this standard, should be logically (e.g., through views) or physically (e.g., in separate databases) separated from those that do. Registrars have to resolve this implementation issue based upon their available resources and technical approaches.

Under the scenario of two (logical or physical) registers, one as an "official" register and one as a work-in-process register, there should not be any conflict between the Registration Status and the Administrative Status. If a data element is still under review, it should be under a "work-in-process" register and cannot have any Registration Status. Conversely, a data element that is already assigned a Registration Status shall not have any Administrative Status, since all the administrative steps should have been completed. In real life, information professionals solve similar problems with a good configuration plan, staging the systems from a "development" environment to a "production" environment.